

REMARKS

Examiner Huson is thanked for her careful review of the present patent application, but the rejections set forth in the Office Action are improper and must be withdrawn.

As an initial matter, the newly added claims of the present application do not add new matter.

Claims 1-3 stand as rejected over Dingeman et al., U.S. Patent No. 5,000,783. Dingeman is cited for the proposition that it is "known to have an extruded starch product." It is respectfully submitted that this teaching is far from sufficient to constitute an anticipation of the pending claims. Dingeman discloses an extrusion of a *native* starch product (see column 11, lines 26-33). Dingeman recognizes that "(n)ative starch is virtually insoluble in cold water". The purpose of Dingeman is to modify the native starch with a water-dispersible polymer to affect the solubility characteristics thereof. Dingeman further teaches that "modified native starch is believed to be an unacceptable binder."

In contradistinction, the claims of the present application specify a *hydroxyalkyl* starch, not a native starch. The starch is characterized after extrusion as being substantially completely soluble in water at 25° C. The Dingeman patent, therefore, fails to anticipate the present invention. Additionally, because Dingeman teaches away from the present invention, it would be of no use in a Section 103 rejection.

The Office Action further indicated that certain claims (including claims "1-6 and 33-43," which is not understood because only claims 1-3 were pending) were rejected over Nakatsuka et al., in view of Redding, Jr. and further in view of Altieri. As the

Examiner will recall, these references have been extensively discussed in copending application 10/687,498 and in parent application 09/863,928. Nakatsuka is clearly inapposite, as it is directed towards the preparation of a "complex" of starch with protein. This "complex", according to Nakatsuka is "not a simple mixture", but rather "some degree of union has been established between both materials by chemical reaction." (Col. 6, lines 33-40). Nakatsuka does not specify the exact nature of this product. Is it a starch? Is it a protein? Does the resulting complex have any polymeric carbohydrate structure whatsoever? What would it mean to "gelatinize" the complex of Nakatsuka? What would the temperature of gelatinization be? If the Examiner persists in this rejection, she is respectfully requested to answer these questions.

Similarly, Nakatsuka teaches swelling of starch, not dissolving, and teaches, at column 10, lines 37-56, that a "protein coagulant" may be added to vary the degree of solubility. This passage confirms that the product of Nakatsuka is not substantially completely soluble under some circumstances.

Also, Nakatsuka fails to teach extruding the starch in an extruder having multiple zones where gelatinization occurs in one zone but not in another. Even if the material of Nakatsuka could be deemed a "starch," how does the Examiner know what the gelatinization temperature of this starch would be, or whether the conditions in Nakatsuka's equipment would be sufficient? Again, the Examiner is respectfully requested to answer these questions if she is to persist with this rejection.

Even if the Examiner were to overlook all of the foregoing however, the rejection would still have to be reversed. The rejection relies on a combination of the Nakatsuka reference with Altieri and Redding, Jr. but this combination is impossible. The Redding,

Jr. reference teaches that chemical starch modification is undesirable. Redding Jr. states as an object of his invention "to provide a cost effective and an energy efficient method of physical modification of starch and other substrates *without the necessity of chemical additives* required by prior art processes. (emphasis added) (See column 2, line 39 et. seq.)

The Office Action was rendered without the benefit of the decision in *Ex parte Whalen II*, Appeal 2007-4423 (July 23, 2008). This decision confirmed the holding in KSR *Int'l Co... v. Teleflex Inc.*, 12S. Ct. 1727, 1741 (2007) that an invention "composed of several elements is not proved obvious merely by demonstrating that each of its elements was known in the prior art." The *Whalen* decision contains language especially applicable here. When the prior art "teaches away from the claimed [invention]," obviousness is particularly difficult to demonstrate. The Board held that "it must be shown that those of ordinary skill in the art would have had some reason to modify the known [prior art] in a way that it would result in the claimed [invention]."

Here, the Examiner's attempt to combine Nakatsuka and Redding Jr. is exactly what is proscribed by the KSR case and by the *Whalen II* decision. The Examiner purports to find elements of the claimed invention independently in the prior art, but this is insufficient to establish obviousness. The references strongly teach away from one another, and the Examiner has not "shown those of ordinary skill in the art would have had some apparent reason to modify" the prior art in the manner contrary to this express teaching away.

For these reasons, withdrawal of the rejections is respectfully requested.

Respectfully submitted,

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